

## MILITARY SPECIFICATION

CAPACITORS, FIXED, MICA DIELECTRIC, ESTABLISHED RELIABILITY  
GENERAL SPECIFICATION FOR

This amendment forms a part of MIL-C-39001B, dated 2 April 1992,  
and is approved for use by all Departments and Agencies of the  
Department of Defense.

PAGE 4

3.3.2.2, delete and substitute:

"3.3.2.2 Quality levels. The quality of lots that have been subjected to and passed the subgroup 1, 100 percent screening inspection of the group A inspection shall be established and maintained in accordance with 4.4.4.2 and EIA-554, method B. Individual ppm defect level (i.e., ppm-2 and ppm-3) and an overall ppm defect level (i.e., ppm-5) shall be established based on the tests prescribed in the subgroup 2 tests of the group A inspections. The defect level for ppm-2 shall be less than 100 ppm."

PAGE 5

Following 3.5.2, add:

"3.5.2.1 Tin plated finishes. Tin plating is prohibited as a final finish or as an undercoat. Tin-lead (Sn-Pb) finishes are acceptable provided that the minimum lead content is three percent (see 6.9)."

PAGE 6

3.8, following title, add:

"(for qualification only)."

PAGE 14

4.5g, after last sentence, add:

"Capacitor styles may be combined in accordance with 4.6.1.1.1 for ppm calculations."

TABLE IX, delete and substitute:

TABLE IX. Group A inspection.

Inspection	Requirement paragraph	Test method paragraph	Sampling procedure
<u>Subgroup 1</u>			
High voltage stabilization	3.7	4.7.3	100% inspection
Dielectric withstanding voltage	3.6	4.7.2	
Insulation resistance (at 25°C)	3.9	4.7.5	
Capacitance	3.10	4.7.6	
Dissipation factor	3.11	4.7.7	
<u>Subgroup 2 (ppm)</u>			
Dielectric withstanding voltage (ppm-2)	3.6	4.7.2	See table X
Insulation resistance (at 25°C) (ppm-2)	3.9.1	4.7.5.1	
Capacitance (ppm-2)	3.10	4.7.6	
Dissipation factor (ppm-2)	3.11	4.7.7	
Mechanical examination (ppm-3) (dimensions only)	3.5	4.7.1	
<u>Subgroup 3</u>			
Insulation resistance (at 125°C)	3.9.2	4.7.5.2	20 samples 0 failures
<u>Subgroup 4</u>			
Visual dimensions: Marking 1/	3.23	4.7.1	13 samples 0 failures
<u>Subgroup 5</u>			
Solderability	3.12	4.7.8	13 samples 0 failures

1/ Marking defects are based on visual inspection and shall be charged only for illegible, incomplete, or incorrect marking. Any subsequent electrical defects shall not be used as a basis for determining marking defects. "

TABLE X, delete and substitute:

TABLE X. Sampling plans for ppm categories.

Lot size	Sample size	
	ppm-2	ppm-3
1 - 13	100%	100%
14 - 125	100%	13
126 - 150	125	13
151 - 280	125	20
281 - 500	125	29
501 - 1,200	125	34
1,201 - 3,200	125	42
3,201 - 10,000	192	50
10,001 - 35,000	294	60
35,001 - 150,000	294	74
150,001 - 500,000	345	90
500,001 - up	435	102

PAGE 16

4.6.1.4, delete title and substitute:

"Subgroups 3 and 4."

4.6.1.5, delete title and substitute:

"Subgroup 5 (solderability)."

4.6.2.1.1.1, delete title and substitute:

"For subgroups 1 and 2."

4.6.2.1.1.2, delete title and substitute:

"For subgroup 3."

TABLE XI, delete and substitute:

TABLE XI. Group C inspection.

Inspection	Requirement paragraph	Method paragraph	Number of sample units	Allowable failures
<u>Subgroup 1</u>				
Vibration <u>1/</u>	3.13	4.7.9	36	1
Temperature coefficient and capacitance drift	3.14	4.7.10		
Thermal shock and immersion	3.15	4.7.11		
<u>Subgroup 2</u>				
Shock, specified pulse <u>1/</u>	3.16	4.7.12	36	1
Terminal strength <u>1/</u>	3.17	4.7.13		
Resistance to soldering heat <u>1/</u>	3.18	4.7.14		
Moisture resistance	3.19	4.7.15		
<u>Subgroup 3</u>				
Life (2,000 hours accelerated)	3.20	4.7.16.2	10 <u>2/</u>	<u>2/</u>

1/ If the manufacturer can demonstrate that this test has been performed five consecutive times with zero failures, this test, with the approval of the qualifying activity, can be deleted. The manufacturer, however, shall perform this test every three years after the deletion as part of long term design verification. If the design, material, construction or processing of the part is changed, or if there are any quality problems, the qualifying activity may require resumption of the specified testing. Deletion of testing does not relieve the manufacturer from meeting the test requirements in case of dispute.

2/ See 4.6.2.1.1.2.

4.7.4, after title, add:

"(for qualification only)."

Following 6.8, add:

"6.9 Tin plated finishes. Tin plating is prohibited (see 3.5.2.1) because it may result in tin whisker growth. Tin whisker growth could adversely affect the operation of electronic equipment systems. For additional information, see ASTM 8545, "Standard specification for Electrodeposited Coating of Tin."

MIL-C-39001B  
AMENDMENT 1

CONCLUDING MATERIAL

Custodians:

Army - ER  
Navy - EC  
Air Force - 85

Review activities:

Air Force - 17, 19, 99  
DLA - ES

Preparing activity:

Army - ER -

Agent:

DLA - ES

(Project 5910-1877)